MINUTES OF DOT-AGC BRIDGE DESIGN SUBCOMMITTEE MEETING

The DOT-AGC Joint Bridge Design Subcommittee met on February 14th, 2007. Those in attendance were:

Greg Perfetti	State Bridge Design Engineer (Co-Chairman)
Berry Jenkins	Manager of Highway Heavy Division, Carolinas Branch AGC (Co-Chairman)
Ron Hancock	State Bridge Construction Engineer
Randall Gattis	Sanford Contractors
George White	Blythe Construction
Bryan Long	Dane Construction, Inc.
Greg Canniff	Rea Contracting LLC
Erick Frazier	S.T. Wooten Corporation
Chris Britton	Taylor & Murphy Construction Co.
Mark Johnnie	Balfour Beatty
Allen Raynor	Asst. State Bridge Design Engineer
Tom Koch	Structure Design Project Engineer
Paul Lambert	Structure Design Project Engineer
Chris Kreider	Regional Operations Engineer – Geotech. Eng. Unit
Scott Hidden	Support Services Supervisor – Geotech. Eng. Unit
John Fargher	Regional Design Engineer – Geotech. Eng. Unit
Nilesh Surti	Design-Build Engineer – Alternative Delivery Unit
Gichuru Muchane	Structure Design Engineer

During the review of the December 13th, 2006 meeting minutes, the following items were discussed:

1. *New AGC-DOT Committee Members*
   Mr. Lambert stated that the Submittal Forms for Proposed Heavy Equipment on Bridge are now available via Structure Design's web site. He added that the forms were intended as an aid to facilitate preparing submittals.

The minutes of the December 13th, 2006 meeting were approved.

The following items of new business were discussed:

1. *Micropile Projects*
   Mr. Fargher gave a presentation on proposed micropile projects. He noted that micropiles are a viable foundation type for small rural off-route low bridges with shallow rock. During the presentation Mr. Fargher noted and discussed the following:
   - The Department is seeking the most economical foundation type for low bridges on sites with shallow rock.
   - Micropiles are a cost-effective alternate to drilled piers for smaller bridges located on sites with the potential for foundation scour.
   - The Department will also evaluate use of pipe piles socketed in rock when considering micropile foundations.
   - Illustrated how micropiles are installed with details about the methods and materials.

   Mr. Fargher also briefly discussed micropile casings and the Department's anticipated testing and approval requirements for the casings.

Contractors had questions regarding the number of suppliers for the casing and also the number of prequalified micropile contractors. Contractors discussed the risk assumed for boring and coring operations, and expressed interest in prequalifying for such drilling operations, for which they currently hire a subcontractor.

2. *Alternates for Concrete Containing Fly Ash*
   Mr. Muchane distributed an article titled *The Impact of Fly Ash on Air-Entrained Concete*, which was published in Issue 43 -- Spring 2006 of the *HPC Bridge Views* newsletter. Mr. Hancock briefly discussed the issue of the air content in concrete containing fly ash, noting that it was not a new problem. He added that there are well documented benefits to using fly ash mineral admixture, and the Department wants to continue to realize these benefits.

   Mr. Hancock stated that, on an interim basis, the Department was considering corrosion protection measures that would be considered equivalent to using fly ash admixture. The alternates may involve use of calcium nitrite or silica fume admixtures.

3. *Pile Driving Analyzer for LRFD*
   Mr. Hidden distributed drafts of special provisions for *Pile Driving Analyzer for LRFD* and *Pile Restrikes for LRFD*. He discussed the need for these special provisions, noting that the Department will soon be implementing Load and Resistance Factor Design (LRFD) specifications that strongly lean towards foundations designs that are based on site specific PDA data. As such, the Department needs to collect more data on PDAs and restrikes. Mr. Hidden invited contractors to review and comment on the two special provisions. He emphasized that he needs as much information as possible.

4. *Temporary Concrete Barrier Rails*
   Mr. Koch distributed an excerpt on temporary barrier rails from a paper presented at the TRB 2006 annual meeting. The paper discussed crash tests performed on temporary barrier rails with an X-bolt connection, which significantly reduced the rail deflection. Mr. Koch stated that there are situations where the Department could benefit from using this type of temporary barrier rail. He invited contractors to comment on the issues to consider prior to allowing use of the rail.

5. *Other*
   i. Mr. Hidden reminded contractors to send their comments on the policy and special provision for MSE Walls to Mr. Hancock or Mr. Jenkins.

   ii. Mr. Perfetti noted that the revisions to the Subdivisions Manual and the Bridge Policy were underway.

   iii. Mr. Jenkins stated the first of three Contractor-NCDOT conferences was held in Wilmington on February 5th and 6th. Initial feedback from the conference suggests that contractors feel that the DBE requirements are a dramatic change from past requirements.

6. *Next Meeting*
   The next meeting is scheduled for April 11th, 2007 in Structure Design Conference Room C.